

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-53  
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

CATERPILLAR INC.

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Caterpillar Inc. 1989 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

<u>Engine Family</u>	<u>Displacement</u> <u>Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems</u> <u>(Special Features)</u>
KCT0403FZD4	6.6 (403)	Smoke Puff Limiter (Turbocharger) (Intercooler) (Diesel Injection-Direct)

Engine models and codes are listed on attachments.

The following are the certification emission standards for this engine family:

<u>Hydrocarbons</u> <u>gm/bhp-hr</u>	<u>Carbon</u> <u>Monoxide</u> <u>gm/bhp-hr</u>	<u>Nitrogen Oxides</u> <u>gm/bhp-hr</u>	<u>Particulates</u> <u>gm/bhp-hr</u>
1.3	15.5	6.0	0.60

The following are the certification emission values for this engine family:

<u>Engine Family</u>	<u>Hydrocarbons</u> <u>gm/bhp-hr</u>	<u>Carbon</u> <u>Monoxide</u> <u>gm/bhp-hr</u>	<u>Nitrogen Oxides</u> <u>gm/bhp-hr</u>	<u>Particulates</u> <u>gm/bhp-hr</u>
KCT0403FZD4	0.5	2.2	4.6	0.36

BE IT FURTHER RESOLVED: That the Executive Officer has been provided all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Code of Regulations, Section 2036).

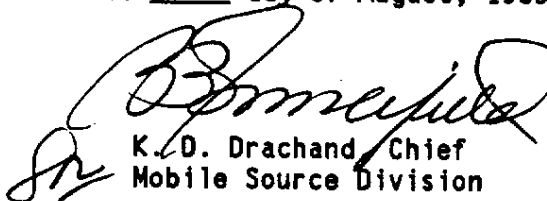
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Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 9th day of August, 1989.

  
K.D. Drachand, Chief  
Mobile Source Division

## 1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Caterpillar Inc. Engine Family KCT0403FZD4  
 Evaporative Family NA Engine Type 16  
 Liters (CID) 6.6 (403)

## ABBREVIATIONS

<u>Ignition System</u>	<u>Exhaust Emissions Control System</u>	<u>Special Features</u>
CA -Centrifugal Advance	AIP -Air Injection-Pump	CCV -Combustion Chamber Valve
ECU -Electronic Control Unit	AIV -Air Injection-Valve	CFI -Central Fuel Injection or Throttle Body Injection
EI -Electronic Ignition	DBC -Dual Bed Catalyst	DID -Diesel Injection-Direct
ESAC-Electronic Spark Advance Control	EGR -Exhaust Gas Recirculation	DIP -Diesel Injection-Prechamber
VA -Vacuum Advance	EIC -Electronic Injection Control	EFI -Electronic Fuel Injection
VR -Vacuum Retard	EM -Engine Modification	IC -Intercooler or Aftercooler
	OC -Oxidation Catalyst	MFI -Mechanical Fuel Injection
	OS -Oxygen Sensor	OBD -On-Board Diagnostics
	HOS -Heated Oxygen Sensor	TC -Turbocharger
	SPL -Smoke Puff Limiter or Throttle Delay	
	TOC -Trap Oxidizer, Continual	
	TOP -Trap Oxidizer, Periodical	
	TWC -Three-Way Catalyst	
	WUOC -Warm-Up Oxidation Catalyst	
	WUTWC-Warm-Up Three-Way Catalyst	

Fuel System

CFI, CL, DID, DIP, EFI, MFI  
 nV-nVenturi Carburetor

VEHICLE MODELS:

Engine: Front \_\_\_\_\_ Mid. \_\_\_\_\_ Rear \_\_\_\_\_  
 Drive: FWD \_\_\_\_\_ RWD \_\_\_\_\_ 4WD Full Time \_\_\_\_\_ 4WD Part Time \_\_\_\_\_

1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINESManufacturer Caterpillar Inc. Engine Family KCT0403FZD4Liter (CID) 6.6 (403) Engine Type 16Emission Control Sys. and (Special Features) EM, SPL (TC, MFI, IC)

Engine Model	Fuel Injection Pump Manufacturer Part Number	Injector Manufacturer Part Number	Maximum Rated hp at rpm	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)	Maximum Rated Torque at RPM	Fuel Rate mm <sup>3</sup> /stroke (lbs/hr)
3116 Code A	*Caterpillar 9Y6692	Caterpillar 7E5998	250 @ 2600 225 @ 2600	106 (92.4) 97 (85.2)	650 @ 1560 638 @ 1560	129 (67.6) 128 (67.3)
Code B	*Caterpillar 9Y6692	Caterpillar 7E5998	215 @ 2600	91 (79.2)	605 @ 1560	120 (63.0)
Code C	*Caterpillar 9Y6692	Caterpillar 7E5998	185 @ 2600	78 (67.9)	520 @ 1560	103 (54.0)
Code D	*Caterpillar 9Y6692	Caterpillar 7E5998	165 @ 2600	69 (60.7)	420 @ 1560	83 (43.6)
Code E	*Caterpillar 9Y6692	Caterpillar 7E5998	185 @ 2600	78 (67.9)	495 @ 1560	98 (51.5)
Code F	**Caterpillar 5R8997	Caterpillar 7E7289	290 @ 2600	121 (105.8)	732 @ 1560	143 (75.0)

\*Basic fuel Pump 7E8952 (Reference Page No. 16.05.01-0403FZD-1).

\*\*Basic fuel Pump 7E7288 (Reference Page No. 16.05.01-0403FZD-1).

Date of Issue 16 JUN 1989 Revisions: NO. 1 - 08 AUG 89

No. 2 - 06 OCT 89